
Chapter 12 — APNSS Implementation and Maintenance

Overview

This chapter provides information on implementing and maintaining APNSS in an Option 11 system.

APNSS hardware requirements

APNSS requires the following hardware:

- NTAK02 SDI/DCH card (each SDI/DCH card can handle two D-channels)
- NT5K19 Analog Tie trunk card
- modem

Modem settings for APNSS applications

Two modems can be used in the United Kingdom for Analog Private Network Signaling System (APNSS) applications:

- BT 4242VSX modem
- Datel 4960FTX modem

BT 4242VSX modem

If the BT 4242VSX modem is used, set the option strap settings as follows:

SW1	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
SW2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW3	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW5	ON	ON	ON	OFF	OFF			

Datel 4960FTX modem

If the Datel 4960FTX modem is used, set the option strap settings as follows:

00	0	29	0
01	1	30	0
07	0	31	1
09	1	32	0
10	1	33	0
11	0	34	0
12	0	35	0
13	0	38	1
14	0	39	1
15	0	72	0
16	0	74	0
17	0	75	0
24	1	76	0
25	1	77	0
26	1	79	0
27	0	80	0
28	0		
SW1: 1, 2, 3, and 4 ON 5, 6, 7, and 8 OFF SK3 must be installed			

APNSS software programming

Follow the steps below to install an APNSS link. The steps must be followed in sequence. The prompts and responses for these steps are explained in the text that follows. Responses in parentheses are default values throughout the procedure.

Step	Overlay	Action
1	LD 17 Configuration Record	Configure the APNSS D Channel Interface Handler, and the unused loop for Virtual channels
2	LD 74 DDSL Data Block	Define the data blocks used for the APNSS protocols
3	LD 16 Route Data Block	Initialize the service routes to be used
4	LD 14 Trunk Data Block	Initialize the channels within the service routes
5	LD 75 IDA Trunk Maintenance	Enable the APNSS link

Step 1: Use overlay 17 to configure the APNSS signaling link (DDSL) and unused loop for virtual channels. The system must be initialized to invoke changes made to DTIB and DTOB.

Prompt	Response	Comment
Req	chg	Change existing data base
Type	cfn	Configuration data block
DPNS	YES	Digital Private Network Signaling. Default is NO
DCHI	0-15	D-channel Port number This prompt is only given if DPNS is YES.
CDNO	1-9	Card number for NTA02 SDI/DCH card

Prompt	Response	Comment
PORT	1,3	ESDI port number on the NTAK02 SDI/DCH card. Ports 1 and 3 are valid
DTIB	35-1000	Size of IDA trunk input buffers for system (determined according to traffic). Note: The system must be initialized to invoke changes to DTIB.
DTOB	4-100	Size of IDA trunk output buffers per DTSL (determined according to traffic). Note: The system must be initialized to invoke changes to DTOB.
...		
cequ	yes	Change to CE parameters
...		
APVL	1-9	Spare loop for APNSS virtual channels. Cannot conflict with TDS, Digital Trunk card or a PRI card. The recommended position is that of the SDI/DCH card. One specified APVL can be used for more than one APNSS link as long as different channels are used for each link.

Step 2: Use overlay 74 to set protocols for the link.

Prompt	Response	Description
REQ	NEW	
TYPE	LSSL	Low speed signaling link, identifies this channel as APNSS
LSSL	nn	Link number identifying the D-channel to be used
SIGL	DA	Level 2 signaling (DASS2)
RATE	EXT	clock from modem
SIDE	AET, BNT	A or B end of APNSS link
CNTL	YES, (NO)	Change link control parameters.
ALRM	TBF PP MM CC FAE PP MM CC HER PP MM CC TSF PP MM CC AIS PP MM CC LOI PP MM CC DAI PP MM CC	Enter the desired persistence time (PP), monitor time (MM), and repeat count threshold (CC) for one of the seven types of alarms. The alarm condition thresholds are shown below.
CNTR	0- 255 (CRT) (TMT) (SCT)	Only prompted if CNTL=YES. Enter the desired threshold for one of the three counters in the range 0-254. If 255 is entered, the threshold is set to infinity. The defaults are: CRT (channel reset threshold) 120 TMT (test message threshold) 50 SCT (stop count threshold) 20

Alarm condition thresholds

Alarm Mnemonic	PP	MM	CC
TBF	0-15 secs (5)	0-24 hrs (0)	0-15 (1)
FAE	0-15 secs (2)	0-24 hrs (1)	0-15 (4)
HER	0-15 mins (1)	0-24 hrs (1)	0-15 (10)
TSF	0-15 secs (0)	0-24 hrs (0)	0-15 (0)
AIS	0-15 mins (1)	0-24 hrs (1)	0-15 (4)
LOI	0-15 secs (0)	0-24 hrs (0)	0-15 (0)
DAI	1-15 mins (1)	0-24 hrs (1)	0-15 (5)

Step 3: Use overlay 16 to initialize the routes.

Prompt	Response	Description
REQ	NEW, CHG	
TYPE	RDB	
CUST	0-99	Customer number
ROUT	XXX	Route number
TKTP	IDA	Trunk type = IDA (Integrated Digital Access)
SIGL	APNSS	APNSS route
...		
ICOG	IAO ICT OGT	Incoming and Outgoing trunk Incoming trunk Outgoing trunk
ACOD	XXXX	Access code for direct access to the route. The ACOD has to be set, but after the set-up of a network numbering scheme it is only used for test access.

Step 4: Use overlay 14 to initialize the channels within the routes. On APNSS links, high and low priority must be different at each end.

Prompt	Response	Comment
REQ	NEW, CHG	
TYPE	RAC VAC	Real Analog Channel Virtual Analog Channel
TN	CC UU III ch	TN for real channels on NT5K19 E&M routes. Channel on APVL - virtual channels (Not prompted for VAC)
XTRK	XFEM	Always XFEM cards for APNSS
DTSL	0-15	DDSL number for APNSS link. Not prompted for VAC
CUST	0-99	Customer number
.		
RTMB	XX YY	Route and member number
CHID	1-15, 17-30	Channel ID for each TN
INC	(YES), NO	Member number (increased) or decreased with channel number
PRI0	(XHP) YLP	High priority on channel seizure Low priority on channel seizure

Step 5: Use overlay 75 to bring the link into service. Both ends of the link should be started within 5 minutes of each other.

- 1 Enable the DCHI link (ENL DDSL n). This puts the DCHI into the ENBL IDLE state.
- 2 Start the DCHI link (STRT n). This makes the DCHI go from ENBL STARTING to ENBL ACTIVE.

APNSS maintenance

APNSS maintenance is nearly the same as DPNSS1 maintenance, except where noted below:

Overlay 32

The STAT command (STAT L S C and STAT L S C U) displays “IDA” to indicate APNSS.

Overlay 36

As in overlay 32, the STAT command displays “IDA”.

Overlay 60

The status of DTI2 channels will display the status of IDA trunks (as for other trunk types).

Overlay 75

The APNSS link is managed in the same manner as DTSL/DDSL:

ENL LSSL x	to enable LSSL x
DIS LSSL x	to disable LSSL x
STAT LSSL x	to print a status of link x

The status of the channels, both real and virtual, can be obtained from the STAT command as follows:

STAT LSRC x (y)	status of real channel y on LSSL x
STAT LSVC x (y)	status of virtual channel y on LSSL x